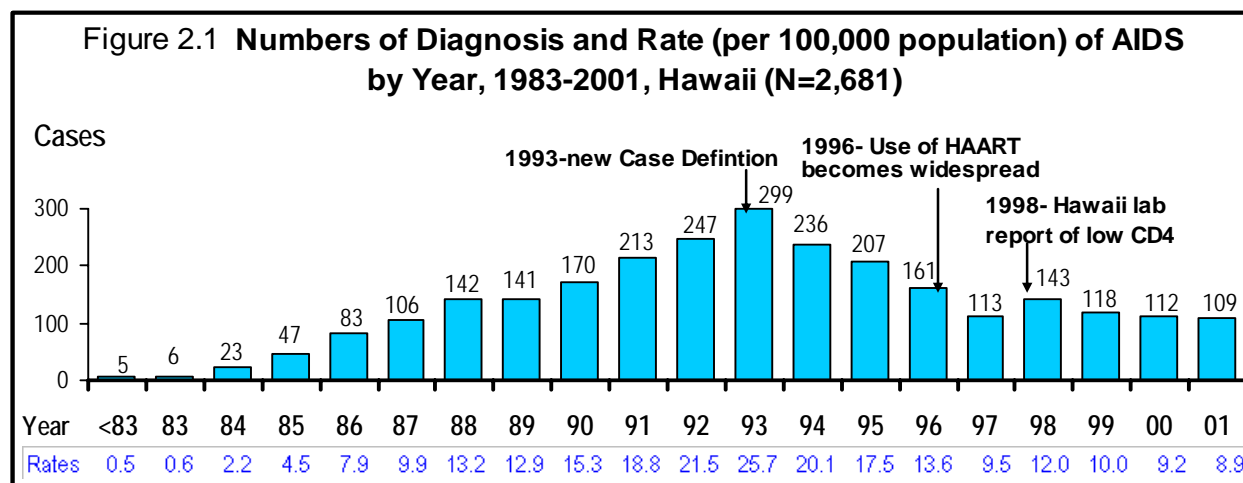


HIV/AIDS Epidemic in the State of Hawai'i

AIDS Trends

As of December 31, 2001, 2,681 cases of AIDS had been diagnosed in Hawai'i and reported by September 15, 2003. The number of persons with AIDS diagnoses increased each year through 1993 (Figure 2.1). The definition of AIDS was expanded in 1993 resulting in an artificial increase in the number of AIDS cases.—A number of cases that would have otherwise met the case definition at a later time met the new definition's criteria in 1993. The decline in the number of diagnosed cases began in 1994. The development and widespread use of highly-active, anti-retroviral agents (HAART) began to reduce HIV morbidity and mortality. By 1996, the epidemiology of the disease was significantly impacted. The number of AIDS cases again increased in 1998, as Hawai'i laboratories met the new requirement to report low CD4 counts. Additional cases were identified. Beginning in 1999, AIDS incidence continued to decrease as fewer HIV-positive persons progressed to AIDS. This trend continued through 2001.

By this point in the epidemic, AIDS incidence rates no longer primarily reflected HIV incidence rates as it did previously. The data now reflect: 1) variations in HIV transmission patterns over a long period of time; 2) differences in access and use of testing and treatment options for those at risk or those already infected; and 3) potential treatment failures¹. The bottom of Figure 2.1 shows this trend as an *incidence rate*. Incidence rates provide a measure of the effect of illness relative to the size of the population. It refers to the number of newly diagnosed cases in Hawai'i for each year divided by the population at risk in Hawai'i during the same years². The incidence rates in Figure 2.1 indicate a trend consistent with the historical overview described above.



¹ Centers for Disease Control and Prevention. Pre-Press Proof: HIV/AIDS Surveillance Update. June 2000

² The formula for calculating the AIDS incidence rate follows (For example, 2001):

$$\text{Incidence rate for 2001} = \frac{109 \text{ (Number of new Diagnosed AIDS cases in 2001)}}{1,227,024 \text{ (Total population in 2001)}} \times 100,000 = 8.9 \text{ Cases / per 100,000}$$

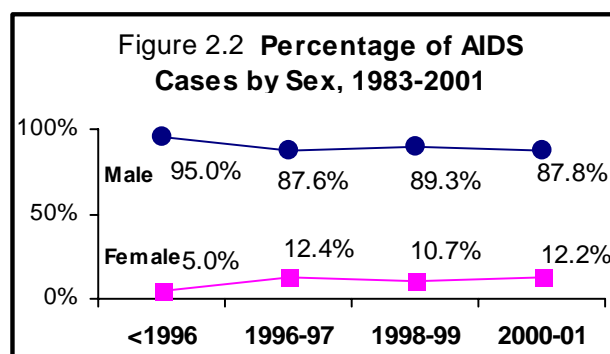
Population are based on Hawaii census data and U.S. Bureau of the census 2001 estimates

AIDS by Gender

By December 31, 2001, 2,495 male (93.1%) and 186 female (6.9%) AIDS cases were diagnosed in Hawai'i. The numbers of Hawai'i AIDS cases by gender show in Table 2.1. Males continue to account for a considerably larger proportion of the epidemic. The actual numbers have decreased for both male and female cases between 1996 and 2001 during each two-year period continuing that downward trend. AIDS cases remained in relatively constant proportion; males represented approximately 88-89% of the cases and females approximately 11-12% (Figure 2.2). This is a change from earlier in the epidemic (before 1996) when the percentages were 95% male, 5% female.

Table 2.1 Hawai'i AIDS cases by Gender, 1983-2001

	Before 1996	1996- 1997	1998- 1999	2000- 2001	Cumulative Total	
Sex	No.	No.	No.	No.	No.	%
Male	1,828	240	233	194	2,495	93.1%
Female	97	34	28	27	186	6.9%
Total	1,925	274	261	221	2,681	100.0%



-Combined two-year data for 2000-2001 shows the rates of diagnosed AIDS cases for male and female were 31.9 and 4.9 per 100,000 population respectively. The rate for males was 6 times the rate for females.

It should be noted that the CDC model for the state AIDS surveillance systems stratifies data collection by "Gender" with male and female categories only. At this point, transgender has not been a collection category for AIDS data in the State of Hawai'i; therefore, no further breakdown of data is available. The surveillance system does collect HIV (not AIDS) information for transgender in Hawai'i, however, that HIV data are not available at this time.

AIDS Cases by Race/Ethnicity

Single race/ethnicity group information will be used in the AIDS reporting system through 2003. Individuals are counted only in the ethnic group with which they are primarily identified. This maintains consistency with the methods used to acquire population data before 2000.

The AIDS epidemic has affected persons in all racial/ethnic groups in Hawai'i, though this effect has not been the same for all groups (Table 2.2). Caucasians comprise the majority of cumulative AIDS cases (1,700, 63.4%). When comparing the time period before 1996 to the most recent 6-year (1996-2001) period, the proportion of AIDS had declined among Caucasians (67.8% vs. 57.4%); increased among Hispanics (4.9% vs. 5.7%), Africans Americans (4.0% vs. 4.9%), combined APIs (24.8% vs. 31.0%), Hawaiians (9.9% vs. 12.8%), and Filipinos (4.7% vs. 6.6%).

Changes in laboratory reporting regulations in 1998 increased case finding in some groups (Figure 2.3). The 1998-1999 time periods showed an increase in new diagnoses among Caucasian and African Americans, and a decrease among Asian/Pacific Islanders and Hawaiians. During the 2000-2001 time

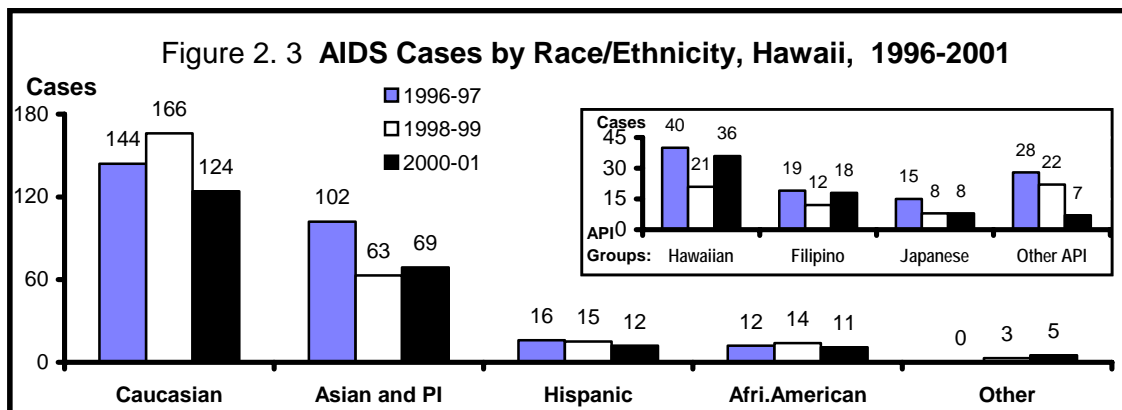
period, the reverse was seen. Despite these variations, the overall relative numbers steadily declined from 1996-1997 (274 cases), 1998-1999 (261 cases), to 2000-2001 (221 cases). This decline is not consistently seen among the various racial/ethnic groups. Twelve (12) new cases among African Americans were diagnosed in 1996-1997 and 11 in 2000-2001; representing an 8% decline. Cases diagnosed among API equaled 102 in 1996-1997 and 69 in 2000-2001, representing a 32% decline. Overall, the percent changes for new AIDS diagnoses from 1996-1997 to 2000-2001 were less for African Americans (8%), Hawaiians (10.0%) and Caucasians (14%) than for Hispanics (25%) and combined APIs (32%).

Table 2.2 Hawaii AIDS Diagnosis by Race/Ethnicity^a (1983 – 2001)

Race/Ethnicity	1983- 1995		1996-2001		Cumulative (1983-2001) Total		2000-2001		
	No.	%	No.	%	No.	%	No.	No.	Rate ^b
Caucasian	1,266	65.8%	434	57.4%	1,700	63.4%	124	56.1%	32.6
Asian and PI	478	24.8%	234	31.0%	712	26.6%	69	31.2%	8.6
Hawaiian	190	9.9%	97	12.8%	287	10.7%	36	16.3%	34.7
Filipino	91	4.7%	50	6.6%	141	5.3%	18	8.1%	8.2
Japanese	86	4.5%	31	4.1%	117	4.4%	8	3.6%	3.1
Other API	111	5.8%	56	7.4%	167	6.2%	7	3.2%	3.3
Hispanic	95	4.9%	43	5.7%	138	5.1%	12	5.4%	13.7
African American	77	4.0%	37	4.9%	114	4.3%	11	5.0%	38.7
Other (Ind.)	9	0.5%	8	1.1%	17	0.6%	5	2.3%	NA
Total	1,925	100%	756	100%	2,681	100%	221	100%	18.2

^a Percentages for all groups are shown as % of total AIDS cases.

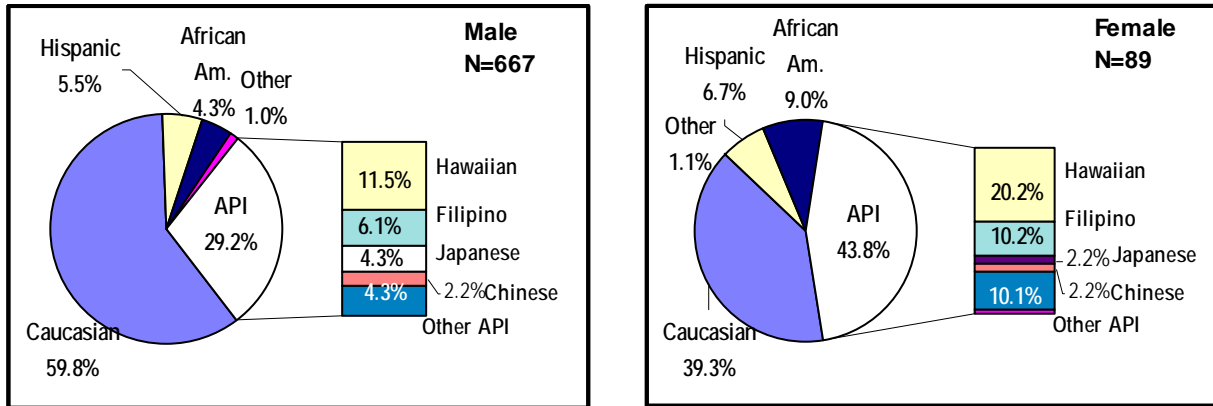
^b Using proportional allocation method to obtain the racial/ethnic subgroup populations to calculate the rate (cases/ per 100,000 persons) for 2000 – 2001 two year period.



In 2000-2001, the rate was the highest for African Americans (38.7/100,000), followed by Hawaiians (34.7), and Caucasians (32.6). The rate for Hispanics (13.7) was below the state average (18.2). The rate was the lowest for combined APIs (8.6). The rate for African Americans was slightly higher than the rates for Hawaiians and Caucasians. However, this rate was nearly 3 times the rate for Hispanics, over 4 times for combined APIs and Filipinos, and over 10 times for Japanese. The “Other API” category contains many different ethnic groups, each with too few cases to be shown separately.

Males and females within each racial/ethnic group have been affected by the AIDS epidemic differently (Figure 2.4). While 60% of male cases are Caucasian, only 39% of female cases are. Almost 44% of females are Asian/Pacific Islander (including 20% Hawaiian) while 29% of males are Asian/Pacific Islander (including 12% Hawaiian). African American women make up 9% of the cases but African American men make up only 4%. Gender-specific risk factors are discussed in depth later in the section, AIDS by Risk Factor.

Figure 2.4 Male and Female AIDS Cases by Race/Ethnicity, Hawai'i, 1996-2001



AIDS by Age

In 2000-2001, as in past years, the highest number of diagnosed cases were among persons in 35-44 years of age (97, 44%) and 25-34 years of age (54, 20%). Recent advances in HIV treatment are increasing the age at onset as the time interval from initial HIV infection to an AIDS diagnosis increases. This is likely to result in an increased age at the time of diagnosis as well as a decreased number of AIDS cases diagnosed. Table 2.3 shows the numbers decreasing in those aged 54 or younger and increasing in those aged 55-64 beginning in 1996.

Table 2.3 Hawai'i AIDS cases, by Age at Diagnosis, 1983-2001

Age	Before 1996	1996- 1998- 2000-			Cumulative	
	No.	1996 No.	1998 No.	2001 No.	No.	%
<13	13	<4	<4	<4	16	0.6%
13-24	61	8	<4	<4	74	2.8%
25-34	641	82	57	44	824	30.7%
35-44	784	108	126	97	1,115	41.6%
45-54	314	60	57	54	485	18.1%
55-64	88	11	12	17	128	4.8%
65+	24	<4	6	6	39	1.5%
Total	1,925	274	261	221	2,681	100%

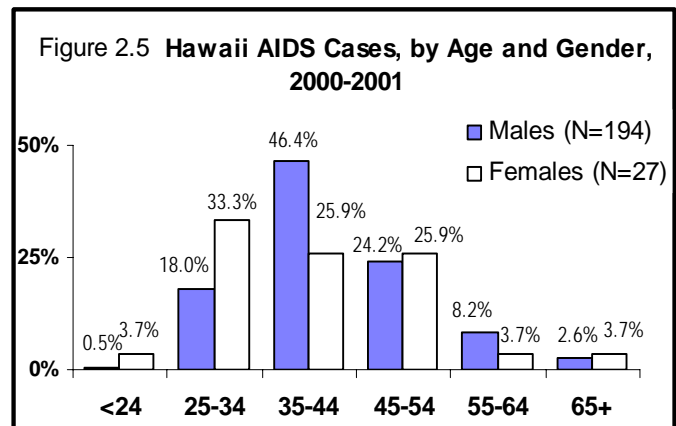


Figure 2.5 shows newly diagnosed cases of AIDS (2000-2001) by age and gender. The highest proportion of female cases were in those aged 25-34, while the highest proportion of male cases were in those aged 35-45. Females were diagnosed with AIDS at an earlier age than males. Overtime, the number of cases for the age group 13-24 has decreased.

AIDS by Risk Factor

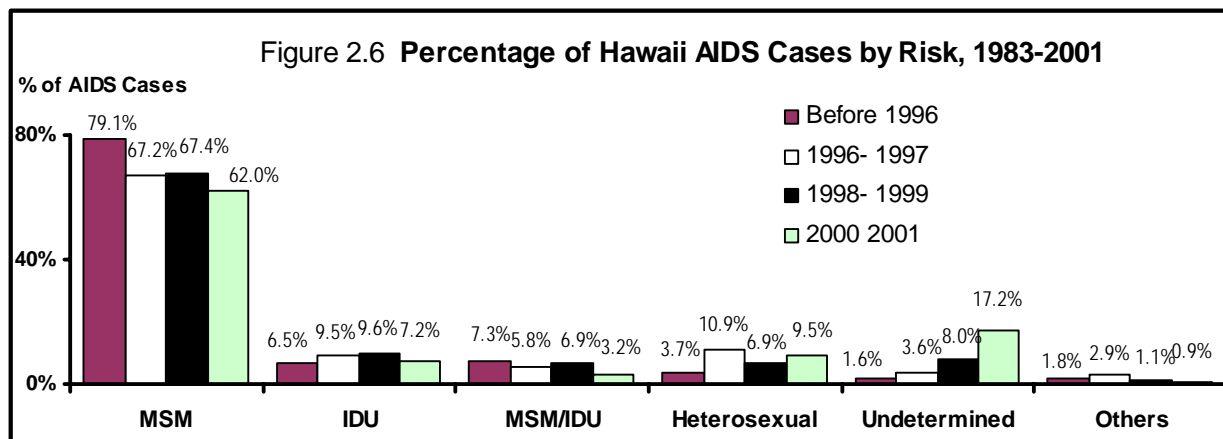
Mode of transmission is related to those behaviors that put an individual at risk for acquiring HIV infection. Within the individual state surveillance systems, risk information is classified in a hierarchy based on the likelihood of transmission. A person with AIDS may have had several risk factors, but only the highest priority risk is counted as the official "risk factor". Only one dual risk, male-to-male sex also

with injection drug use (MSM/IDU) is listed as a combined single risk category. No transgender AIDS data are available at this time.

The MSM risk factor comprises the vast majority of cumulative reported AIDS cases (2,011, 75%) (Table 2.4). MSM/IDU added to that number brings the total to 2,192 (81.8%) of all AIDS cases. IDU was the second highest risk behavior, accounting for 192 AIDS cases (7.2%) of Hawai'i's AIDS epidemic. Cumulative cases, attributed to heterosexual contact (140, 5.2%), are still relatively few

in number. Since 1996 (three two- year groupings), the number of AIDS cases attributed to all risk factor groups had declined except the "unknown risk" group.

The proportions of cases attributed to specific exposure (i.e., risk) categories have changed (Figure 2.6) since the epidemic began. Overall, the proportions of cases attributed to MSM and MSM/IDU have been declining; while those cases attributed to heterosexual contact, unknown risk, or IDU have been increasing. However, MSM still accounted for the majority of cases (137, 62%), while heterosexual contact became the second highest risk behavior (21, 9.5%) in Hawai'i in 2000-2001.



In 1996-2001, among males, three-quarters of new cases diagnosed were attributed to MSM (Table 2.5), followed by IDU (7%) and MSM/IDU (6%). Among females, 53.9% of new cases diagnosed were attributed to heterosexual contact, and 22.5% were attributed to IDU. Heterosexual contact is the most significant risk factor among females representing 53.9% of

Table 2.4 Hawai'i AIDS cases by Risk Factors, 1983-2001

Risk Factor	Before 1996	1996-1997	1998-1999	2000-2001	Cumulative Total	
	No.	No.	No.	No.	No.	%
MSM	1,514	184	176	137	2,011	75.0%
IDU	125	26	25	16	192	7.2%
MSM/IDU	140	16	18	7	181	6.8%
Heterosexual	71	30	18	21	140	5.2%
Perinatal	10	<4	NA	<4	13	0.5%
Unknown	30	10	21	38	99	3.7%
Other	35	NA	<4	<4	45	1.7%
Total	1,925	274	261	221	2,681	100%

Table 2.5 Hawai'i AIDS Cases, by Risk Factors and Gender, 1996-2001

Risk Factor	Male		Female		Total	
	No.	%	No.	%	No.	%
MSM	497	74.5%	-	-	497	65.7%
IDU	47	7.0%	20	22.5%	67	8.9%
MSM/IDU	41	6.1%	-	-	41	5.4%
Heterosexual	21	3.1%	48	53.9%	69	9.1%
Perinatal	<4	-	<4	-	<4	-
Unknown	54	8.1%	15	16.9%	69	9.1%
Other	6	0.9%	4	4.5%	10	1.3%
Total	667	100%	89	100%	756	100%

AIDS cases. The actual number of female cases attributed to heterosexual contact is about twice that of male cases. Males represent more than twice the number of cases attributed to IDU (47 vs. 20) than females. The actual percentage of male cases is only 7% while for female cases it is 22.5%. AIDS Mortality³

New treatments (HAART) became available beginning in 1996 and AIDS-related deaths declined annually. Now HIV infection is no longer one of the top fifteen leading causes of resident deaths in the State of Hawai'i for either males or females for 2001⁴.

According to data from Department of Health, Office of Health Status Monitoring, HIV infection was the leading cause of death in Hawai'i among individuals in the 25-34 age group, and was the

second leading cause of death among individuals in the 35-44 age group in 1993⁵. Nevertheless, by 1999-2001, HIV disease (including AIDS) dropped to seventh leading cause of death among persons 25-44 years old (Table 2.6).

Table 2.6 Ranking of 10 Leading Underlying Causes of Death among Persons 25-44 Years of Age, Hawai'i, 1999-2001

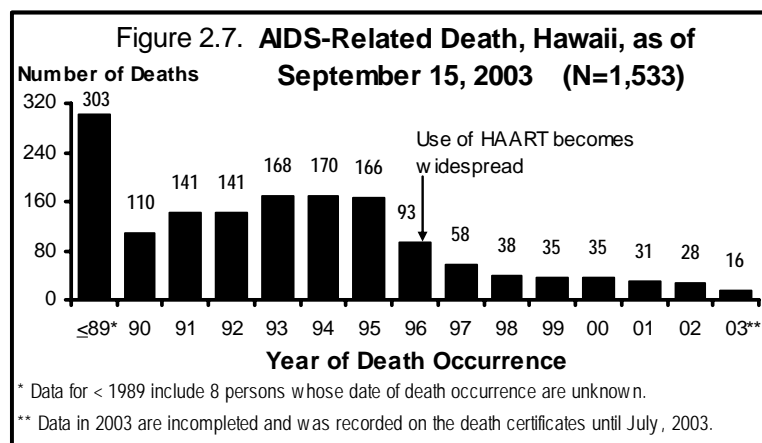
Rank	Cause of Death	Deaths	Total Death N=1,362
1	Malignant Neoplasms	261	19.2%
2	Unintentional Injury	242	17.8%
3	Heart Disease	215	15.8%
4	Suicide	173	12.7%
5	Cerebrovascular	60	4.4%
6	Homicide	52	3.8%
7	HIV	43	3.2%
8	Diabetes Mellitus	24	1.8%
9	Liver Disease	22	1.6%
10	Chronic Low. Respiratory Dis.	19	1.4%

Source: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC <http://webapp.cdc.gov/cgi-bin/broker.exe>

As of September 15, 2003, there were 1,533 AIDS-related deaths reported in Hawai'i: 1,451 male and 82 female.

Figure 2.7 illustrates the trend in AIDS-related death. The annual number of AIDS deaths increased through the late 1980's and the early 1990's peaking in 1994 at 170. It began to decline annually at a rate averaging approximately 38% until it largely stabilized in 1998.

The slowing of the decline in the number of deaths since 1998 may be a sign of limited access to, or use of, health care services



³ Mortality: The number of deaths during a specific time period.

⁴ www.state.hi.us/health/stats/vr_01/death.pdf Race/ethnicity-specific data by request from Office of Health Status Monitoring, Hawai'i Department of Health.

⁵ Kong, VL. *Mortality due to HIV infection in Hawai'i, 1984-1993*. Research and Statistics Report; issue no 64. Honolulu, HI: Hawai'i Department of Health, Office of Health Status Monitoring.

as well as the possible limitation of current therapies among persons in care⁶. Thirty-one deaths occurred in 2001, an 82% decrease from the peak in 1994. This trend of decreasing AIDS-related death is consistent with widespread usage of highly-active anti-retroviral agents (HAART). The mortality rate for AIDS in 1999-2001 was 8.3 cases/per 100,000 population⁷, averaging 2.8 cases/100,000 per year.

Mortality proportions by racial/ethnic group before 1996 were very similar to the actual proportions of diagnosed AIDS before 1996 in those racial/ethnic groups. Racial/ethnic groups varied little more than one percent between the percentage of cases and the percentage of deaths (data not shown).

Comparing the mortality data for 1996-2001 with pre-1996 (Table 2.7), indicates that the proportions of mortality were higher in the recent time period for females (11.0% vs. 3.9%), APIs (40.3% vs. 26.2%), Hawaiians (15.5% vs. 11.0%), Filipinos (7.9% vs. 4.3%), and “other APIs” (9.7% vs. 3.7%). It was similar among Hispanics (3.4% vs. 3.8%) and African Americans (3.8% vs. 3.5%).

Table 2.7 Comparison of Persons Dying of AIDS, and Comparison of Persons dying of and living with AIDS

	Death				Living
	Before 1996		1996-2001		12/31/01
	N=1,198		N=290		N=1,154
Sex	No.	%	No.	%	%
Male	1,151	96.1%	258	89.0%	90.9%
Female	47	3.9%	32	11.0%	9.1%
Race/Ethnicity					
Caucasian	791	66.0%	151	52.1%	63.6%
Asian and PI	314	26.2%	117	40.3%	23.6%
Hawaiian	132	11.0%	45	15.5%	9.3%
Filipino	51	4.3%	23	7.9%	5.5%
Japanese	62	5.2%	12	4.1%	3.6%
Chinese	25	2.1%	9	3.1%	1.9%
Other API	44	3.7%	28	9.7%	3.4%
Hispanic	46	3.8%	10	3.4%	5.4%
African Am.	42	3.5%	11	3.8%	6.6%
Other (Ind.)	5	0.4%	1	0.3%	0.9%
County					
Honolulu	907	75.7%	224	77.2%	65.3%
Hawaii	142	11.9%	27	9.3%	16.6%
Maui	94	7.8%	26	9.0%	14.0%
Kauai	55	4.6%	13	4.5%	4.1%
Total	1,198	100.0%	290	100%	100.0%

The proportion of AIDS death were much greater among males than among females. In 1996-2001, most of the persons with AIDS who died were male (89.0%), which is similar to the proportion of male persons living with AIDS (90.9%). Although Asian and Pacific Islanders represented 23.6% of persons living with AIDS in 1996-2001, they comprised 40.3% of persons who died. This can also be seen in Hawaiians (9.3% vs. 15.5%), Filipinos (5.5% vs. 7.9%), and other API (3.4% vs. 9.7%). Honolulu County had a higher proportion of persons whose deaths were attributable to AIDS than persons living with AIDS. These disparities could be the result of a different response to the disease or reduced use or access to care.

Reference:

Integrated Epidemiologic Profile of HIV/AIDS in Hawaii. May 2005, HIV/AIDS Surveillance Program, Hawaii State Department of Health, Honolulu, Hawaii.

⁶ Integrated Epidemiologic Profile for HIV/AIDS Prevention and Care Planning in Louisiana, 2002, Page 34.

⁷ Death data was from AIDS Surveillance and population based on U.S. 2000 population of 1,211,537.